

'ECONOMY OF EXPRESSION' FOR ICON Fauci Bids NIH Farewell After Half Century of Service

BY CARLA GARNETT

How do you thank someone who has devoted more than 54 years to pursuing medical science, combating infectious disease and promoting public health—particularly when the honoree has declined all bells, whistles and elaborate celebrations of any kind? That was NIH's challenge on Dec. 16, when an extremely modest assembly gathered in Wilson Hall—one of the campus's smallest venues—to pay tribute to an agency icon.

Dr. Anthony Fauci, set to retire from the agency he had served continuously since 1972 (and as a clinical associate from 1968 to



Dr. Anthony Fauci (r) receives a standing ovation as he bids farewell after more than 50 years at NIH.

PHOTO: LESLIE KOSSOFF

1971), and a few dozen of his dearest friends and colleagues came together for the only farewell event he wanted: “a straightforward, no-nonsense observance of one of the most

momentous occasions in NIH history,” said Dr. Lawrence Tabak, performing the duties of NIH director, who offered remarks “from one Brooklyn kid to another.

“Tony, you’ve been a constant source of knowledge and inspiration at NIH for so many years—no matter what has been thrown at us. No matter how spectacular a sendoff, none of us could adequately express our gratitude for what

you’ve given us, what you’ve given the world, for more than a half century.”

In turn, Fauci would hear from a select

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Veep chooses Berko design. See story, p. 12.

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A BRIDGE OF COMMUNICATION Ukraine’s Health Minister Visits NIH, Explores Collaboration

BY DANA TALESNIK



Ukraine’s Minister of Health Dr. Viktor Liashko

PHOTO: DANIEL SOŇÉ

devastated Ukraine’s health system. As the war rages on, Ukrainian health officials already have set their sights on recovery and rehabilitation.

Health care challenges can be daunting for any country even in the best of times; such challenges intensify exponentially during times of war. It’s been nearly a year since Ukraine began battling Russia’s incursion, a war that has

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DISTINGUISHED SCIENTIST NCI’s Widemann Discusses NF1 Therapeutics

BY AMBER SNYDER

Dr. Brigitte Widemann of the National Cancer Institute was honored as 2022’s featured speaker at the annual Anita B. Roberts Lecture Series—“Distinguished Women



NCI’s Dr. Brigitte Widemann

Scientists at NIH,” hosted by the women scientists advisory committee. Roberts was an eminent scientist who spent 30 years at NCI and rose to chief of the Laboratory of Cell Regulation and Carcinogenesis. She was the third most-cited female scientist in the

SEE WIDEMANN, PAGE 8

Take the Workplace Civility and Equity Survey

The 2023 NIH Workplace Civility and Equity Survey, or Workplace CES, is currently open and will close on Friday, Feb. 24. Built in partnership with OHR, EDI and UNITE, the survey—administered once every three years—gives eligible staff the opportunity to confidentially provide feedback on harassment and discrimination in the NIH workplace.

The Workplace CES is open to NIH federal employees, trainees, volunteers and participating contractors on board on or before July 17, 2022.

If you are eligible to take the survey, check your inbox for an email with the following heading:

From: NIHWorkplaceCES@mail.nih.gov
Subject: 2023 NIH Workplace Civility and Equity Survey

For more information, visit hr.nih.gov/wces.
Questions? Email NIHWorkplaceCES@mail.nih.gov or reach out to your IC coordinator.

Blood and Platelet Donations Needed

The NIH Blood Bank is open Monday through Friday, 7:30 a.m.-4 p.m. for donations by appointment only.

The Donor Center at Fishers Lane is open for platelet and double red cell donations.

Visit www.cc.nih.gov/blooddonor to make an appointment, or call the NIH Blood Bank in Bldg. 10 at (301) 496-1048 or the Platelet Center at Fishers Lane at (301) 496-4321.

National Wear Red Day The First Friday in February



GET #OURHEARTS PUMPING!

Feb. 3 Is National Wear Red Day

Each year on the first Friday in February, the National Heart, Lung and Blood Institute (NHLBI), The Heart Truth and others around the country celebrate National Wear Red Day to bring greater attention to heart disease as a leading cause of death for Americans and to highlight steps people can take to protect their heart.

Join NIH'ers on Friday, Feb. 3 to get #OurHearts pumping!

Wear red and join The Heart Truth, the NIH Fitness Center and NHLBI leaders for 25 minutes of heart-pumping activity. During this live event, Drs.



On Dec. 25 at approximately 3:30 p.m. in the penthouse of Bldg. 35 (also known as Porter Phase I), an air handling unit suffered a ruptured coil, resulting in the release of approximately 90,000 gallons of chilled water. At left, mechanic Angelo Parker operates a chain that is tied to an isolation valve to shut off the water flow. Alas, the valve failed, so other measures had to be taken.

PHOTOS: MICHELLE KILOSKY/NIH ORF

EXTREME-WEATHER CONSEQUENCES

Multiple Buildings on Bethesda Campus Still Recovering from Flooding

During the recent heavy rains and cold snap, NIH's Bethesda campus suffered water damage from floods in multiple buildings that ranged from minor to catastrophic. Even a minor flood or leak can have significant consequences.

Buildings that sustained damage included the D corridor in Bldg. 10 (floors 5 down to the B1 level), along with Bldgs. 14, 21, 31 and 49. More significantly, Bldg. 50 suffered numerous leaks of the perimeter heating system, affecting more than 47,000 square feet of space. There also were 11 water main ruptures throughout the campus.

Most significantly, the flooding in the Bldg. 35 complex (35 and 35A, or Porter Neuroscience Research Center) was so bad that the building had to temporarily close for safety reasons. In response, multiple Office of Research Facilities (ORF) and Office of Research Services (ORS) divisions and numerous lab managers and other staff worked together to help re-open the complex. Wings B and C, however, are still closed.

Two primary incidents took place in Bldgs. 35 and 35A:

The first event happened on Dec. 24 when reheat coils started rupturing all over the B and C wings of Bldg. 35. What was thought to be about 20 ruptures turned out to be 99 failures or leaks caused by an abrupt pressure spike in the low-pressure water heating system.

The second incident occurred on Dec. 25 when a chilled water coil in an air handling unit ruptured and associated isolation valves failed, releasing approximately 90,000 gallons of chilled water. This event affected labs in Bldg. 35A in pod D from floors 3 through the basement. Some spaces have reopened, but many areas remained closed as cleanup continues.—Gregar Odegaarden, ORF/ORS

Gary Gibbons, NHLBI director, and David Goff, director of NHLBI's Division of Cardiovascular Sciences, will join NIH Fitness Instructor Charissa Moble and others around the country for a sampling of fun aerobic exercises including kickboxing,

dance and flowing stretches. All fitness levels are welcome to participate.

Join: <https://www.facebook.com/hearttruth/events> or <https://videocast.nih.gov>.

All of Us Returns Genetic Health Results to Participants

NIH's *All of Us* Research Program has begun returning personalized health data to more than 155,000 participants, with reports detailing whether participants have an increased risk for specific health conditions and how their body might process certain medications. This marks a major milestone for the program, delivering on its promise to share valuable health information with participants.



Dr. Alicia Zhou

“By returning health-related DNA information to participants, we are...fueling both scientific and personal discovery that could help individuals navigate their own health,”



“All of Us is setting a new precedent for longitudinal research programs.”

—DR. ALICIA ZHOU



said Dr. Josh Denny, *All of Us* chief executive officer. “This type of partnership with our participants is crucial for building trust and fulfilling the commitment we made to drive research that can offer meaningful insights for all.”

All of Us aims to partner with at least 1 million people who reflect the diversity of the United States to accelerate medical breakthroughs.

About 80% of *All of Us* participants represent communities that have been historically underrepresented in medical research, and nearly 50% of *All of Us* participants identify with a racial or ethnic minority group.

The program started returning genetic ancestry and trait results to participants in December 2020. So far, the program has offered such results to more than 175,000 participants and continues to return about

6,000 results each month.

In this first phase of returning health-related DNA results, participants who provided a blood sample and consented to receive genomic information are individually invited to receive their results. They can choose which health-related results they want, if any, and get an alert when their results are ready.

The program's Hereditary Disease Risk report, informed by recommendations from the American College of Medical Genetics and Genomics, includes 59 genes and variants associated with serious, medically actionable health conditions. These genes are linked with an increased risk of specific cancers, heart conditions, blood disorders and more.

Participants whose results show they may have an increased risk of a serious health condition will be offered a clinical

DNA test through the program's genetic counseling resource, conducted outside of the program at no cost.

Additionally, genetic counselors are available to meet with participants and their family members or

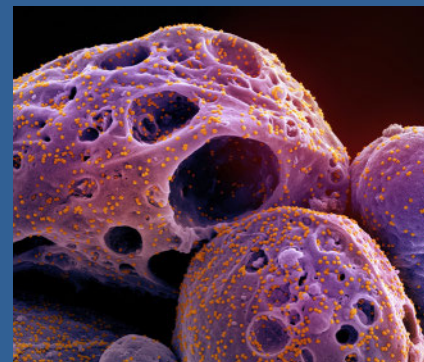
health care provider to discuss and interpret their results.

“Returning information in research programs is the ethical choice, but must be

done responsibly and equitably,” said Dr. Alicia Zhou, chief science officer of Color Health, the genetic counseling resource for the program. “*All of Us* is setting a new precedent for longitudinal research programs.”

All of Us works with a consortium of national and community partners across the United States to help reach people and collect DNA samples and data from surveys, physical measurements, electronic health records and wearable devices.

The program plans to increase the number of participants who are invited to receive genetic health-related results throughout 2023, including new participants who join the program. **R**



ON THE COVER: Scanning electron micrograph of a cell (purple) infected with the Omicron strain of SARS-CoV-2 virus particles (orange) isolated from a patient sample and colored

IMAGE: NIAID INTEGRATED RESEARCH FACILITY

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Editor:

Carla Garnett • Carla.Garnett@nih.gov

Associate Editor:

Dana Talesnik • Dana.Talesnik@nih.gov

Assistant Editor:

Eric Bock • Eric.Bock@nih.gov

Editorial Intern:

Amber Snyder • Amber.Snyder@nih.gov

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Above l, at the conference table, NIH Deputy Director for Intramural Research Dr. Nina Schor addresses the delegation as NIH Acting Associate Deputy Director Dr. Courtney Aclin looks on. At center, Ukrainian postdoc fellows Dr. Nina Kubatova of NIDDK (l) and Dr. Andrii Kopach of NINDS discuss their research. At right, Clinical Center CEO Dr. James Gilman (l) and Fogarty International Center Deputy Director Dr. Peter Kilmarx describe NIH activities.

Ukraine

CONTINUED FROM PAGE 1

In December, Ukraine’s Minister of Health Dr. Viktor Liashko visited the Clinical Center to discuss his country’s health needs during wartime and beyond, and how deepening ties with NIH might further those efforts.

“While we’re fighting and [engaging] in combat activities on the frontline,” said Liashko through a translator during the Dec. 12 visit, “we’re also as an institution thinking about how to improve and develop our health system and we’re thinking about research and development and all the potential we’ll be able to explore with our partners.”

Listening to a rundown of NIH research and the inner workings of the Clinical Center—by NIH Deputy Director for Intramural Research Dr. Nina Schor and Clinical Center CEO Dr. James Gilman—Liashko expressed gratitude to NIH and CDC organizers for “creating a bridge of communication between Ukrainian specialists and health care workers and U.S. experts” toward better medical cooperation.

Schor, who hosted the visit, thanked the delegation for making the difficult journey, underscoring NIH is eager to help with their recovery in this challenging period. “We are hoping your visit will be the beginning of a robust collaboration and allow us to learn from one another,” she said.

NIH currently funds about 20 different research collaborations with Ukraine, mainly between universities, noted Fogarty International Center Deputy Director Dr. Peter Kilmarx, who suggested there are opportunities for additional joint efforts.

Of particular interest, said Liashko, is research on innovative drugs. He also welcomed cooperation between NIH and Ukraine’s National Cancer Institute through joint protocols and research exchange.

Throughout Liashko’s visit, though, attention remained focused on the many health challenges of war, from mental health and trauma to rehabilitation. “We need to think about this right now,” he said, “so we don’t face even more negative effects in the future.”

With that, the delegation moved from the CC’s Medical Board Room to a clinic and a lab to learn more about NIH’s mental health and rehabilitation research.

The Psychological Side: Mental Health

The war in Ukraine has taken a massive psychological toll on the country’s citizens and soldiers.

“Ever since February [2022], the number of people with mental health issues has

exploded and we currently have millions [affected], not thousands,” said Liashko, while visiting a National Institute of Mental Health research unit.

Many are witnessing the effects of war firsthand; many more are exposed to the death and destruction through daily live broadcasts. Psychiatric hospitals are overflowing with patients who have acute mental health conditions, he said. Drug use—from sedatives to illicit drugs—is soaring. Soldiers are returning with withdrawal symptoms and serious mental health issues, including suicidal tendencies, and need urgent help.

Preliminary estimates show some 15 million people—nearly a third of Ukraine’s population—will have psychological trauma from the war. Liashko estimated at least 20% will need medication and other treatment beyond basic support.

“That’s why during this active phase of war,” he said, “we are thinking about mental health issues and research developments



Liashko (c) and his delegation stand outside the Clinical Center with Kilmarx (second from l); Dr. Ezra Barzilay, country director, CDC Ukraine Office (fifth from r); Schor; Aclin, Gilman and Dr. Nataliya Podolchak, deputy country director, CDC Ukraine.

PHOTOS: DANIEL SOÑE

because we understand it will take a lot of effort, time and resources to deal with it on different levels.”

Dr. Carlos Zarate, chief of NIMH’s Experimental Therapeutics and Pathophysiology Branch, addressed the delegation about depression and suicide prevention research. He noted that many patients don’t respond to standard antidepressants which, when they do work, can take a long time to provide relief.

“Our focus is on developing therapies for treatment-resistant depression that work in hours or days, instead of weeks or months,” said Zarate.

His lab has been studying ketamine, an anesthetic that works efficiently and fast but has serious drawbacks.

Recently, Zarate’s lab developed a compound from a metabolite of ketamine that does not have the anesthetic’s side effects or misuse potential. It’s headed for clinical trials this year at the CC’s NIMH research unit.

Liashko expressed interest in the research and in collaborating with NIH on additional mental health disorders, notably post-traumatic stress disorder (PTSD).

Zarate looks forward to collaborating. By investing in mental health resources, he said, “you can address [problems] early and minimize impact for years to come.”



Dr. Leighton Chan (l), chief of the CC’s Rehabilitation Medicine Department, describes NIH’s traumatic brain injury research. At right, the delegation learns about NIH’s biomechanics equipment in the rehab lab.

The Physical Side: Rehabilitation

Ukrainians are incurring serious injuries during the war, yet rehabilitation medicine is virtually nonexistent in Ukraine, said Liashko.

In the U.S., rehabilitation medicine accelerated in the decades after World War II, treating such common war injuries as burns, limb loss, and spinal cord and traumatic brain injuries (TBI). To study brain injuries incurred on the battlefield, NIH partnered with the U.S. military more than a decade ago to create the Center for Neuroscience and Regenerative Medicine (CNRM), the largest

TBI research collaboration in the world.

Dr. Leighton Chan, chief of the CC’s Rehabilitation Medicine Department and co-director of CNRM, discussed two protocols from the collaboration.

Early results from one study, he said, suggest that “prolonged exposure to heavy weapon blasts transiently raises the level of injury biomarkers and causes temporary neuropsychiatric changes.”

Chan also cited a concussion study showing that aerobic training can decrease symptoms of TBI perhaps by resetting vascular reactivity in the brain.

“Many are suffering these types of injuries

from all the bombing and shelling,” said Liashko, who is eager to collaborate on similar protocols.

Dr. Diane Damiano, chief of the CC’s neurorehabilitation and biomechanics research section, then demonstrated

how their lab assesses motion, muscle strength, balance and brain function during movement as a basis for establishing a patient’s rehab needs or evaluating recovery over time.

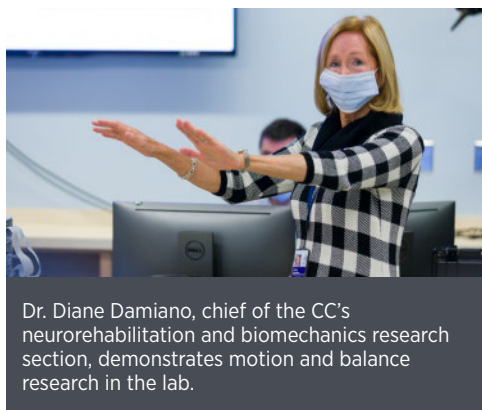
“People with TBI look pretty good from the outside, but when you challenge them—such as a mental test while walking—we can start to see their deficits more clearly,” she said. She also emphasized the need for intensive motor training to help patients recover mentally as well as physically.

Pledging collaboration, Chan said, “This is the beginning of a conversation.”

Later in the day, the delegation met with Dr. Lawrence Tabak, performing the duties of NIH director, and senior leaders from other HHS agencies.

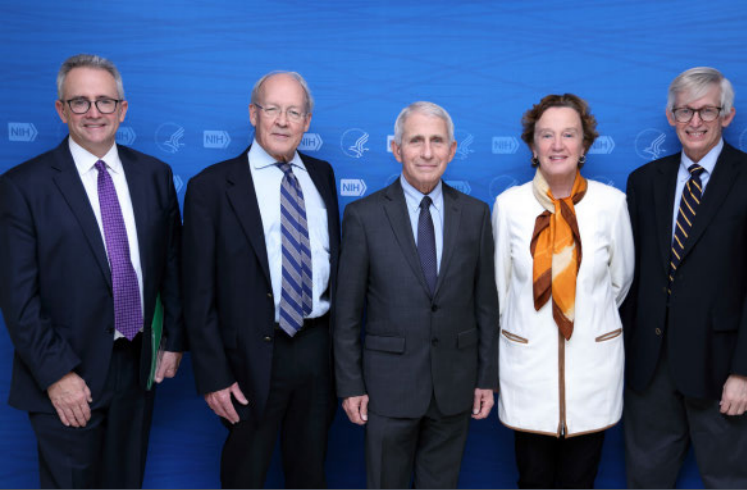


Dr. Carlos Zarate, chief of NIMH’s Experimental Therapeutics and Pathophysiology Branch



Dr. Diane Damiano, chief of the CC’s neurorehabilitation and biomechanics research section, demonstrates motion and balance research in the lab.





At the farewell event are (from l) NIH Acting Chief of Staff John Burklow, NIAID Acting Director Dr. Hugh Auchincloss, Fauci and wife Dr. Christine Grady, and NIAID Clinical Director Dr. Cliff Lane. At right, in an open chat with Burklow, Fauci reflects on his career at NIH.

PHOTOS: CHIA-CHI CHARLIE CHANG

Fauci

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few he identified: “closest friend” Dr. John Gallin; “professional soulmate and chief confidant” Dr. Cliff Lane; comrade through the pandemic, former NIH Director Dr. Francis Collins who Fauci said he was honored to “partner on a historic tenure as NIH director”; and the “love of my life,” wife Dr. Christine Grady.

“Tony’s an extraordinary physician,” said Gallin, who met Fauci in 1972 outside their respective NIH labs. “What makes him a great physician? First, his incredible work ethic—undoubtedly acquired from his parents and Jesuit education. His remarkable intelligence, knowledge of medicine and impeccable clinical judgment all contribute to him being a great doctor. But his success also is because he relates to people of all backgrounds...He’s a great listener and talks

to people—not at them. He can keep a secret. He tells his patients, his friends and those he advises what they need to know—not necessarily what they want to hear.”

Lane said Fauci, his boss of the last 40 years, is what is known in medicine as an “All Star, greatest-of-all-time, triple threat as evidenced by his extraordinary skills as one, a clinician; two, a researcher; and three, a teacher...in other words, to use a sports analogy, he has been Michael Jordan, Babe Ruth, Tom Brady, Wayne Gretzky and Pele, all in one.”

“[Even before the historic global health crisis] Tony was world renowned for his non-stop work ethic,” said Collins, who recalled finding himself in January 2020 “riding shotgun with a man on a mission, facing the deadly Covid-19 pandemic. The world had the extremely good fortune of having Tony Fauci in the driver’s seat...I witnessed him throw it into overdrive...”

Throughout our hundreds of hours together, month after month, he never lost sight of the goal—to save people from this pandemic—and he never lost his humanity.”

Grady talked about what NIH means to Fauci from her vantage point.

“NIH is embedded in Tony’s DNA,” she observed. “I think the reason NIH is part of Tony is because of how much he loves and admires what the NIH is about...He loves the mission, the cutting-edge science, the intense efforts to improve life and health for the people the world over. Perhaps most important, he loves the people at NIH. You, NIH’ers, are Tony’s people.”

Following the strict three-minute testimonials, NIH Acting Chief of Staff John Burklow joined Fauci on stage to talk about his career. Topics ranged from how he decided to become a physician to facing confrontations by AIDS activists in the 1980s to his philosophy on leadership to



Fauci (l) advised seven U.S. presidents over the course of his career. At left, he and close friend Dr. John Gallin (r), director of the Clinical Center at the time, accompany President Bill Clinton on a CC tour in 1995. Dr. Harold Varmus (2nd from r) was NIH director. At right in Masur Auditorium, Fauci gives a briefing on HIV/AIDS for President Ronald Reagan (l) in 1987.



Fauci called Lane his “professional soulmate and chief confidant.” At left, the two consult on HIV data in the lab back in the day (circa 1987). At right, in 2014 outside the hospital, they celebrate the successful treatment of Nina Pham, a nurse who recovered from Ebola.

2014 PHOTO: ERNIE BRANSON



consulting seven U.S. presidents on public health to his advice for communicating science to the public.

“Precision of thought and economy of expression,” Fauci suggested. “Know what your message is and say it in as few words as possible. Know your audience. The goal of your communication is not to show how smart you are, but to get people to understand what the hell you are talking about.”

Attended by members of Fauci’s lab, NIAID’s Laboratory of Immunoregulation, and staff of his administrative office as well as such science and medicine luminaries as former CDC Director Dr. Julie Gerberding and Nobel Laureate and former NIH Director Dr. Harold Varmus, the event—an “economy of expression” in reality—ended with brief comments from the honoree.



In March 2021, Fauci (l) teamed up with his ally throughout the pandemic, then-NIH Director Dr. Francis Collins (c), and NIMHD Director Dr. Eliseo Pérez-Stable at the National Cathedral in Washington, D.C. to encourage Covid-19 vaccination in the faith community.

PHOTO: CHIA-CHI CHARLIE CHANG


“I am sad to leave this extraordinary institution,” Fauci said, “but I actually savor and relish the scope, depth, breadth and always amazing and challenging experiences I have had over the last 54 years.”

As he prepares to drive away from the NIH campus for the last time as a staff member, he said he is as much or more in awe of it as he was the first time.

“That speaks volumes about the place,” he noted. “I feel deep-seated gratitude and appreciation having been given the opportunity to be part of this organization and to have made some degree of contribution to domestic and global health in the multiple roles that I have been privileged—and I do mean privileged—to play as a scientist, a clinician, a clinical investigator, an institute director and ultimately a policymaker. This is the only place in the world where I could have had the opportunity to do all of this.”

In the interview, Fauci said the next phase of his career and life would be devoted to using his wealth of experience to encourage the next generation of young people to pursue science as a career and to urge those already in science to add elements of public service to their repertoire.

He concluded by putting his mixed emotions regarding retirement in context. “The sadness I feel about leaving is truly strongly balanced by the energy and excitement I feel about what lies ahead for me in the next chapter.”

NIH’ers can view the archived event at: <https://videocast.nih.gov/watch=48728>. 

NIH-Supported DASH, TLC Diets Rank High

Two NIH-supported diets, Dietary Approaches to Stop Hypertension (DASH) and Therapeutic Lifestyle Changes (TLC), together earned five No. 1 spots in U.S. News & World Report’s 2023 “Best Diets” rankings.

NHLBI researched, developed and tested both diets. Of 24 diets evaluated, DASH ranked first in the “Best Heart-Healthy Diets,” “Best Diets for Diabetes” and “Best Diets for Bone & Joint Health” categories. TLC ranked first in the “Easiest Diets to Follow” and “Best Family-Friendly Diets” categories.



DASH is a long-term healthy eating plan that supports overall heart health and helps lower blood pressure and cholesterol. TLC expands on DASH to help people lower cholesterol and maintain a healthy weight.

PHOTO: PROSTOCK STUDIO/SHUTTERSTOCK

To receive top rankings, a diet must be nutritious, safe, easy to follow, effective for weight loss and protective against diabetes and heart disease.

DASH is a long-term healthy eating plan that supports overall heart health and helps lower blood pressure and cholesterol. TLC expands on DASH to help people lower cholesterol and maintain a healthy weight.

For more information about each diet, including free recipes and meal plans, see:

- ♥ <https://bit.ly/3GtD8mJ>
- ♥ <https://bit.ly/3QsqRnl>

Widemann

CONTINUED FROM PAGE 1

world and was one of the top 50 most-cited scientists in the world from 1982 to 2002.

Roberts's legacy as a scientist and mentor lives on in the lecture series. Widemann "exemplifies many of the same qualities that made Anita Roberts such a beloved scientist and mentor," said Dr. Rebecca Voglewede, a representative of the NIH fellows committee, introducing the speaker.

Widemann is chief of the Pediatric Oncology Branch and is also co-leader of MyPART (My Pediatric and Adult Rare Tumor Network), which is funded by the Cancer Moonshot Initiative.

In her lecture, "Advancing the Development of Effective Therapies for Children and Adults with Rare Tumors," Widemann discussed her breakthrough development of the first FDA-approved medical treatment for neurofibromatosis type 1 (NF1), a genetic disorder that causes multiple manifestations including inoperable tumors.

Widemann earned her M.D. from Cologne University in Germany and completed her pediatric residency at the University Children's Hospital in Cologne. She then joined NCI as a pediatric and hematologic oncology fellow and has remained at NCI ever since. She has earned many awards and accolades in her career, and is building her own legacy as a mentor for the next generation of scientists.

Widemann's Work

All pediatric cancers are considered rare—about 17,000 new cases every year

for ages 0-19 years old, versus about 2 million new cases per year in adults—and researchers have drastically reduced the mortality rate of such cancers over the years. Widemann attributes this success largely to national and international collaborations in clinical trials.

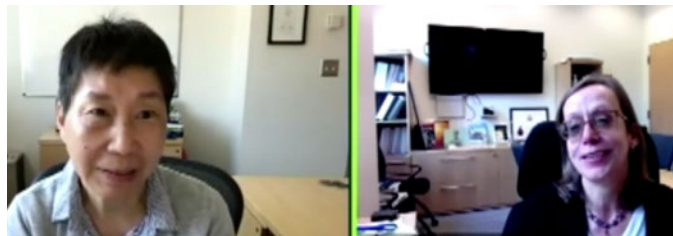
The condition Widemann studies, NF1, is the most common single gene disorder in the nervous system, affecting 1 in every 3,500 people. Her research focuses specifically on plexiform neurofibromas, which are benign tumors that can develop anywhere in the body along peripheral nerves. The tumors typically occur in very young patients, can cause many problems such as pain and sometimes transform into a rare, malignant form of neurofibroma called malignant peripheral nerve sheath tumor (MPNST).

At the time Widemann began her research, there were no therapies available for plexiform neurofibromas. She essentially built her own data set by conducting a natural history study of people with NF1. In the initial study, she looked at how the tumors grow and used that knowledge to inform her clinical trial guidelines.

Some colleagues thought Widemann's study was "boring," but ultimately, "this study taught us more than several of the clinical trials I have conducted," she said.

Breakthrough

After the natural history study and several treatment trials, which did not benefit the



Moderator Dr. Doris Wu of NIDCD and Widemann address questions after the lecture.

patients, she progressed to a phase 1 clinical trial of selumetinib. This drug is a MEK inhibitor that had not worked in clinical trials as a treatment for several adult cancers including breast cancer.

Selumetinib shrank tumors in almost all the children enrolled in the study (who had inoperable plexiform neurofibromas). Widemann confirmed the drug dosage in a dose-finding study, and then compared the drug results with the original natural history study to determine how selumetinib affects the growth of plexiform neurofibromas.

Children who were treated with selumetinib had a decrease in tumor volume sustained over several years. Conversely, children of the same age who were enrolled in Widemann's first natural history study (who did not receive selumetinib), generally experienced an increase in tumor volume over the same time period.

Widemann and her team and collaborators took her data to the FDA and, 30 years after the NF1 gene was discovered, the results of the selumetinib and natural history studies resulted in the first FDA-approved drug for pediatric NF1. The drug also has been approved for use in numerous other countries. Another NCI study of selumetinib evaluated the drug in adult NF1 patients and also saw a significant reduction in tumor size.

"It's a marathon, not a sprint," Widemann said of the long but rewarding process.

Selumetinib is not a foolproof solution, however. When patients stop taking the drug, their tumors can begin to grow again.

How can we maximize patient benefit while they're taking the drug? Widemann asked. She and another researcher in her team, Dr. Andrea Gross, will soon begin studying this question in very young patients. They want to know



The Pediatric Oncology Branch

if administering selumetinib very early in life—starting daily and then transitioning to intermittent dosing—can prevent disfigurement when tumors grow in “critical areas” (such as the face).

Next Target

The aggressive form of neurofibroma, MPNST, still unfortunately does not have any good treatment options other than complete surgical resection (removal), which is often not feasible.

Selumetinib is not effective against MPNST, Widemann said, briefly discussing a study by Dr. Karen Cichowski that is looking at a combination of three different drugs and showing promising results against the rare tumor type.

Researchers are, however, making progress in preventing development of MPNST, Widemann noted. Atypical neurofibroma of uncertain biologic potential is a recently identified class of neurofibroma that seems to be a precursor for MPNST. Surgical resection of these atypical neurofibromas may be a way to prevent development of MPNST. And cell-free DNA blood tests may be able to test for evidence of MPNST. Widemann and colleagues are also beginning a new natural history study involving patients at high risk for MPNST.

MyPART & Partnerships

Widemann also talked about MyPART, which focuses on rare solid tumors affecting children, teens and adults under age 39.

She discussed several ongoing trials for chordoma and alveolar soft sarcoma, and efforts by MYPART, NIH Clinical Center collaborators, advocacy partners and experts outside of the NIH called “NIH rare tumor clinics.” These clinics have helped advance knowledge about several rare cancers. Partnerships between consortia, community hospitals, advocacy groups and national experts will be critical for accelerating progress in rare tumor research and treatment, she emphasized.

“It takes a community to solve cancer,” agreed Dr. Doris Wu, senior investigator at the National Institute on Deafness and Other Communication Disorders, who moderated the lecture.

To view a recording of the full lecture, visit <https://videocast.nih.gov/watch=45832>. 

Good Hydration Can Promote Healthy Aging

Adults who stay well-hydrated appear to be healthier, develop fewer chronic conditions and live longer than those who may not get sufficient fluids, according to an NIH study published in *eBioMedicine*.

Using health data from 11,255 adults over a 30-year period, NHLBI researchers analyzed links between serum sodium levels—which go up when fluid intake goes down—and various indicators of health. They found that adults with serum sodium

levels at the higher end of a normal range were more likely to develop chronic conditions and show signs of advanced biological aging than those with serum sodium levels in the medium ranges. Adults with higher levels also were more likely to die at a younger age.

The study expands on research the scientists published in March 2022, which found links between higher ranges of normal serum sodium levels and increased risks for heart failure.

Both findings came from the Atherosclerosis Risk in Communities (ARIC) study, which includes sub-studies involving thousands of Black and White adults from throughout the United States.

For this latest analysis, researchers assessed information study participants shared during five medical visits—the first two when they were in their 50s and the last when they were between ages 70-90. Researchers excluded adults who had high levels of serum sodium at baseline check-ins.

They then evaluated how serum sodium levels correlated with biological aging, assessed through systolic blood pressure, cholesterol, blood sugar and other health markers that provided insight about how well each person’s cardiovascular, respiratory, metabolic, renal and immune system was functioning. They also adjusted for age, race, biological sex, smoking status and hypertension.

Normal ranges of serum sodium levels fall between 135-146 milliequivalents per liter (mEq/L). Adults with serum sodium levels above 144 mEq/L correlated with a 50% increased risk of being biologically older than their chronological age.

The National Academies of Medicine suggests that most women consume 6-9 cups of fluids daily and for men, 8-12 cups. Research shows



PHOTO: AMORN SURIYAN/SHUTTERSTOCK

about half of people worldwide don’t meet daily water intake recommendations.

Covid Vaccine for Children After MIS-C Appears Safe

A study of children and adolescents who received a Covid-19 vaccination following multisystem inflammatory syndrome (MIS-C) found that there were no reports of serious complications, including myocarditis or MIS-C recurrence. The NHLBI-funded study demonstrates it is safe to get a vaccine after having MIS-C. The findings were published in *JAMA Network Open*.

The multicenter observational study, the largest of its kind to examine Covid vaccination in this group, helps resolve a lingering question about whether the Covid vaccine can increase the risk of health problems in young people who have had MIS-C, a rare and potentially

fatal immunological reaction that can occur following Covid-19 infection.

To date, more than 9,000 patients have been diagnosed with MIS-C in the U.S., and 74 have died, according to CDC data. Symptoms can range from stomach pain, fever and rash to inflammation of the heart muscle, a serious condition called myocarditis, and organ failure.

The cross-sectional study included 22 medical centers in North America participating in the NHLBI’s Long-Term Outcomes After the Multisystem Inflammatory Syndrome in Children (MUSIC) study. It enrolled 385 patients ages 5 or older with prior MIS-C who were eligible for Covid-19 vaccination. Of this group, 185 (48.1%) received at least one vaccine dose.

Of those who received a Covid vaccination following MIS-C, about half experienced mild and typical reactions, including arm soreness and fatigue. There were no reports of serious complications, including myocarditis or recurrence of MIS-C, the researchers said.

Lead study researchers, who have routinely treated children with MIS-C throughout the pandemic, said these findings support the CDC’s recommendation that patients with a history of MIS-C can safely receive a Covid vaccine at least 90 days after diagnosis.

“In light of the acute and long-term consequences of Covid-19, it is vital to continue the development, testing and deployment of preventive as well as therapeutic agents in at-risk groups as well as the general population,” said NHLBI Director Dr. Gary Gibbons.

The MUSIC study is part of an NIH collaborative effort called CARING for Children with COVID, which aims to better understand how Covid-19 affects children, who account for roughly 13% of the total cases in the U.S.

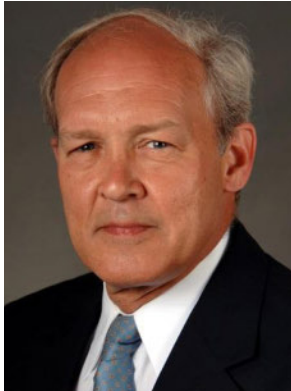
Auchincloss Named Acting Director for NIAID

Dr. Hugh Auchincloss has agreed to serve as acting director of the National Institute of Allergy and Infectious Diseases (NIAID).

Auchincloss assumed the acting role on Jan. 1. He has served as NIAID's principal deputy director since joining NIH in 2006. He has played a key role in research planning and implementation activities, including helping to prepare and support a strategic vision for NIAID, and contributing to the management of NIAID's extensive portfolio of basic, clinical and applied research and product development activities.

Prior to joining NIAID, Auchincloss was a transplant surgeon and professor of surgery at Harvard Medical School, as well as an NIAID grantee. For more than 17 years he operated a laboratory in transplantation immunology at Massachusetts General Hospital in Boston.

In 1998, he founded the Juvenile Diabetes Research Foundation Center for Islet Transplantation and served as its director until 2003. He subsequently served as chief operating officer of the NIAID Immune Tolerance Network.



Dr. Hugh Auchincloss

legacy," he said. "Of course, there is always more to accomplish in scientific research—to keep pushing discoveries forward and building on your body of research—but I am ready to pass the torch to the next generation to take our foundational discoveries to the next level."

Smith earned his bachelor of science degree in zoology from the University of Maryland, College Park, in 1973 and his Ph.D. in physiology from Johns Hopkins University in 1979. He completed postdoctoral research in physiology at Harvard University, in neurobiology at the Marine Biological Laboratory in Woods Hole, Mass., and in neurophysiology at Northwestern University in Chicago.

"As an undergraduate, I became interested in physiology, and I realized mainly through working in physiological research laboratories as a student that engaging in scientific discovery could be a vocation with all the intellectual and practical challenges that I was looking for in a career," Smith said.

Before coming to NIH, he was a Humboldt fellow at the Physiological Institute of the University of Göttingen in Germany, and a faculty member in the department of physiological science and interdepartmental program in neuroscience at the University of California, Los Angeles.

He joined NINDS in 1994 as a senior investigator in the Laboratory of Neural Control and was subsequently named chief of CSNS, which he founded in 1997.

"I came to NIH from an academic faculty position where I was developing a research career in neuroscience," he said. "NIH provided the optimal environment

for collaborative interactions and resources that would enable discovery and progress in my scientific program so that I could contribute impactfully to advance my field."

Smith's research career has been devoted to discovering and understanding the basic neural mechanisms of breathing

in mammals. He and his team primarily focused on identifying the main structures and networks in the central nervous system that underlie and produce the rhythm of breathing.

One of Smith's most noteworthy scientific accomplishments is identifying the pre-Bötzinger complex—a region in the brainstem—as the essential structure for generating respiratory rhythm.

"This seminal discovery provided the field with opportunities to unravel the cellular and circuit bases of rhythm generation—a quest in neurophysiology for over a century, which is still ongoing," he explained. "My laboratory has made very significant inroads toward solving this fundamental problem as well as advancing the understanding of neural mechanisms controlling breathing normally and in pathophysiology."

Smith authored or coauthored more than 100 articles, reviews and book chapters. His research as well as mentorship have garnered numerous honors.

In 2017, he received an NIH Graduate Partnership Program Outstanding Mentor Award from the Graduate Student Council. The award recognizes outstanding mentors for their leadership and dedication to graduate students. In 2016, he received a Postbac Distinguished Mentor Award.

"I have had the privilege of working with many talented students at NIH and NINDS," Smith said. "I will miss guiding students toward fulfilling their career aspirations."

In retirement, he plans to restore a legacy house on the Maryland seacoast, travel and continue to publish scientific work as a scientist emeritus at NINDS.

"NIH/NINDS has provided me with a phenomenally nurturing scientific environment allowing me to pursue my passion for science and be part of a community dedicated to scientific discovery—all of which is an absolute privilege," he said.

"I will miss being fully immersed in the culture of scientific creativity and collegiality. There is a common bond of understanding among my colleagues that we are all part of a special collective on a mission dedicated to the cause of scientific discovery for its intrinsic value and to benefit society—a very heady enterprise that provides great personal inspiration and motivation."

After 28 Years, NINDS's Smith Retires

BY SHANNON E. GARNETT

Dr. Jeffrey Smith, chief of the cellular and systems neurobiology section (CSNS) in the Basic Neuroscience Program at NINDS, retired on Dec. 31, after 28 years of service to NIH—all with NINDS.

"I have arrived at the juncture in my scientific career where I have accomplished essentially what I set out to achieve in terms of my contributions and establishing my scientific



Dr. Jeffrey Smith

NIH Remembers Patient Advocate Lee

BY DANA TALESNIK

NIH mourns the passing of Bruce Hatch Lee, a Maryland real estate developer who became a patient advocate for rare kidney cancer. Lee died at his home in Kensington, Md., on Dec. 19, after a year-long battle with pancreatic cancer. He was 58 years old.

Lee first came to NIH in 2015 with his teenage son Andrew, who was diagnosed with advanced HLRCC, a rare kidney cancer. Andrew, while participating in multiple NIH clinical trials, had founded a nonprofit, Driven to Cure, to raise awareness and funding for rare kidney cancers. After Andrew's passing in 2019, Bruce took the wheel at Driven to Cure, which since its inception has raised more than \$1 million for research.

"Faced with the tragedy of a rare cancer that took the life of his son Andrew, Bruce



Bruce Lee, outside the Clinical Center by the tree and plaque dedicated to his late son Andrew

Lee refused to run away from the grief; instead, he ran directly toward the community of other families with the same condition," said former NIH Director Dr. Francis Collins. "He helped many members of those families get access to potentially life-saving interventions."

Bruce was a passionate and tireless advocate for patients and families grappling with HLRCC, referring many at-risk individuals to NIH to get screened for the underlying FH gene variant.

"Bruce was a lifeline for countless patients," said Dr. Marston Linehan, chief of the

Urologic Oncology Branch at the National Cancer Institute (NCI). "He came to NIH to see many of the patients we saw in the clinic. He gave them help and hope.

Even in the face of advanced disease himself, Bruce would come to NIH and take young patients for a ride in the sports car that had been his son's."

Lee spoke at length with many patient families, listening with compassion, often giving those from out of town a ride from the airport to NIH and staying by their side to help them navigate screening, treatment options and concerns.

"Bruce somehow had a way of conveying that with a big smile and a reassurance that was so comforting to our patients, many of whom were hearing about this disorder for the first time," said Linehan.

As vice chair of the HLRCC Family Alliance, Lee worked with NCI to lower the recommended screening age for HLRCC from 21 to 8—guidelines that are facilitating earlier diagnosis and helping to save lives.

"We have lost a compassionate and dedicated ally in the fight against cancer," said Collins.

Lee was diagnosed with a malignant tumor at NIH in 2021 during his annual HLRCC screening. He continued advocating until the end:

"Tell them to never give up," he said in the weeks before his passing. "Collaboration is critical. Spread the knowledge."

Friends have pledged to continue running Driven to Cure. Bruce is survived by wife Sarah and son Tommy.



Above, Bruce's son Andrew, who died in 2019, visits with Dr. Marston Linehan. Below, in 2021, Lee (l) greeted HLRCC patient Luke Schmaedeke by the sports car that's a fundraising vehicle for Driven to Cure.



NHLBI Study Seeks Volunteers

Healthy volunteers at least 18 years old with no history of cardiovascular disease are needed to participate in a study with the National Heart, Lung and Blood Institute. Researchers are interested in understanding how oil enriched with palmitoleic acid (omega-7 oil) affects metabolism and cardiovascular risk. All study-related medications, tests or procedures are at no cost to you. Receive compensation for participation at the end of the completed study. Contact the Clinical Center Office of Patient Recruitment at (866) 444-2214 (TTY users dial 711) or ccopr@nih.gov. Refer to study #18-H-0019. Online <https://bit.ly/3XEJnMr>.

Sickle Cell Study Recruits

Sickle cell disease is an inherited blood disorder that interferes with delivering oxygen to the tissues. A blood stem cell transplant is the only potential cure. NIH investigators want to determine whether a study drug (MGTA-145) combined with another drug (plerixafor) can increase the number of blood stem cells collected in one session from people with SCD. Compensation is provided. Contact the Office of Patient Recruitment at (866) 444-2214 (TTY users dial 711) or ccopr@nih.gov. Refer to study #000766-H. Online <https://bit.ly/3EoRoOt>.

NHGRI Needs Healthy Children

Researchers at the National Human Genome Research Institute (NHGRI) are seeking healthy children between 2 and 17 years old to participate in a study about the immune system in patients with mitochondrial disease in comparison to their healthy peers. Compensation provided. Contact the Office of Patient Recruitment at (866) 444-2214 (TTY users dial 711) or ccopr@nih.gov. Refer to study #13-HG-0053 Online <https://go.usa.gov/xSZ7c>.

Arthritis Study Recruits Participants

Did you know there are some genetic factors related to how much pain you experience with arthritis? When arthritis is managed properly there is a less burden on an individual. Your participation in this research study will help develop family-based strategies to improve arthritis outcomes. To learn more, contact the Office of Patient Recruitment at 866-444-2214 (TTY users dial 711) or ccopr@nih.gov. Refer to study #000912. Online <http://bit.ly/3iuBHfK>.



Above, Alex Berko (c) and his parents Richmond Berko and NIH Chief People Officer Julie Berko meet Second Gentleman Doug Emhoff and Vice President Kamala Harris at the vice president's residence. At right, the holiday card Alex designed features the vice president's home in a snow globe.

GROUP PHOTO COURTESY THE WHITE HOUSE



Berko Wins VP Holiday Card Contest

BY AMBER SNYDER

The Second Family's 2022 holiday card features art done by a familiar hand: Alex Berko, the youngest son of NIH Chief People Officer Julie Berko. Alex, age 15, is a sophomore at Duke Ellington School of the Arts in D.C. His artwork was entered into a contest judged by Vice President Kamala Harris, with one crucial detail withheld: Alex didn't know anything about the competition.

Julie said Alex's art teacher told the 15-year-old about a summer project with a quick turnaround time back in July 2022. Alex was to create a holiday card for an unnamed client featuring a mysterious house (which turned out to be One Observatory Circle, the vice president's official residence).

His mom emphasized that he needed to "get this super right," he recalled. He painted the 5.5-inch by 8-inch card in gouache (an opaque watercolor), setting the mystery house in a snow globe. After several rounds of revisions with his art teacher, the snow globe was shown on a coffee table and accompanied by pinecones, fir leaves and red berries.

Alex also added small details that turned out to be references to the Second Family: a lotus (Harris's first name means "lotus flower" in Hindi) hidden in one of the pinecones, a menorah and a Christmas tree. He submitted the card and heard nothing for the next four months.

In November, Julie told him he needed a suit to accompany her to a holiday party she was attending that was hosted by the vice president. But there was more to the story than that: on Thanksgiving, Alex learned that he

first needed the suit to Zoom that day with the holiday card mystery client. When he logged on, he was greeted by Vice President Harris and Second Gentleman Doug Emhoff. Harris explained the contest to Alex and informed him of his selection.

"All I could say was 'whoa, oh my god, and that's crazy,'" Alex recalled.

That wasn't his last meeting with Harris; he, Julie and Julie's husband Richmond were invited to one of Harris's holiday receptions to celebrate in person.

"Meeting [Harris] and just going to that event was a really big prize for me," Alex summarized. He did receive his own copy of the card signed by the Second Family, as well as an ornament that was inspired by his design. Alex's card was distributed to about 30,000 people.

Alex's interest in art stems back to his toddler years. He started drawing on the walls of his house when he was 3 years old.

"Alex was able to draw people in perspective at an early age, so I knew his talent was something unique," Julie recalled. She and Richmond found a more appropriate artistic outlet for Alex in the Stone Branch School of Art in Rockville, and his art has flourished ever since. Now in high school at Duke Ellington, he is considering a career as an artist.

You may have seen Alex and his art before this. He has a painting in the Student Hall of Reagan National Airport. He was also featured in an NBC television show, where he was interviewed along with some of his classmates during a trip to the National Gallery of Art to view the Afro-Atlantic Histories exhibit.

Follow his artistic journey on Instagram at @alexseezart.



Above, Alex received an ornament inspired by his card design. Below, the artist at work creating the winning holiday card design

PHOTOS: JULIE BERKO

